

The claims defining the invention are as follows:

1. A radioactive dose dispensing device for automatically filling a container with a required radioactive dose in a sterile environment, said device being stand alone and radiation shielded and including control means to control a mix of radioactive stock solution and dilution stock solution, the radioactivity of which mix is monitored by radiation detection means.
2. A radioactive dose dispensing device as claimed in claim 1 wherein the container is a plunger operated disposable syringe.
3. A radioactive dose dispensing device as claimed in claim 2 wherein a shielded receptacle is provided in the device to receive the syringe.
4. A radioactive dose dispensing device as claimed in claim 3 wherein drive means are provided to actuate the plunger of the syringe.
5. A radioactive dose dispensing device as claimed in claim 4 wherein the drive means is a linear drive mechanism adapted to move either the syringe or its plunger relative to one and other.
6. A radioactive dose dispenser device as claimed in any one of claims 1 to 5 wherein a disposable tubing assembly is used to provide a sterile fluid pathway for the stock solutions.

7. A radioactive dose dispenser device as claimed in claim 6 wherein pinch valves are provided to switch between the radioactive stock solution and the dilution stock solution.
8. A radioactive dose dispenser device as claimed in any one of claims 1 to 7 wherein the automation of the device and its calculation of a requisite dose is controlled by a programmable logic controller (PLC) in association with a radiation detector which controls the radioactive dose passing through the tubing and being dispensed into the syringe.
9. A radioactive dose dispenser device as claimed in claim 8 wherein the device and its PLC are operable by means of a computer interface.
10. A method of automatically dispensing a dose of a radioactive solution using a software controlled lead shielded device which includes the steps of
  - providing the device with a radioactive stock solution and a dilution stock solution
  - using a computer software interface to the device to control the dose dispensed automatically into a syringe or vial in the device.